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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,865	10/21/2005	Akira Nakayama	4670-0112PUS1	1243

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EXAMINER

RHEE, JANE J

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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02/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/553,865	Applicant(s) NAKAYAMA ET AL.	
	Examiner JANE RHEE	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/21/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7316864. Although the conflicting claims are not identical, they are not patentably distinct from each other because US Patent '864 discloses a binder for electrode of lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight % of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP); and 20 to 85 weight % of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP (claim 1).

Since US Patent '864 discloses the same monomers as desired by the applicant, it is inherent that the copolymer exhibits a swelling degree of 4 or below in an electrolyte obtained by dissolving LiPF₆ in the concentration of 1 mole/liter into a solvent of 1:2 (volume ratio at 20.degree. C.) mixture of ethylene carbonate (EC) and diethyl carbonate (DEC).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (6756153).

As to claim 1, Yamamoto et al. discloses a binder for electrode of lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight % of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP); and 20 to 85 weight % of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP (col. 3 lines 7-17).

As to which copolymer exhibits a swelling degree of 4 or below in an electrolyte obtained by dissolving LiPF₆ in the concentration of 1 mole/liter into a solvent of

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1:2 (volume ratio at 20.degree. C.) mixture of ethylene carbonate (EC) and diethyl carbonate (DEC), since Yamamoto et al. discloses the same binder desired by the applicant and an electrolyte obtained by dissolving LiPF₆ in the concentration of 1 mole/liter into a solvent of 1:2 (volume ratio at 20.degree. C.) mixture of ethylene carbonate (EC) and diethyl carbonate (DEC) (col. 12 lines 5-8), it is inherent that the copolymer exhibits a swelling degree of 4 or below.

As to claim 2, Yamamoto et al. discloses a binder for electrode of lithium ion secondary battery, which comprises a copolymer, a component comprising at least one ethylenically unsaturated monomer whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP) (component (a)); and a component comprising at least one ethylenically unsaturated monomer whose homopolymerization yields a polymer insoluble in NMP (component (b)) (col. 3 lines 7-17).

As to which copolymer exhibits a swelling degree of 4 or below in an electrolyte obtained by dissolving LiPF₆ in the concentration of 1 mole/liter into a solvent of 1:2 (volume ratio at 20.degree. C.) mixture of ethylene carbonate (EC) and diethyl carbonate (DEC), since Yamamoto et al. discloses the same binder desired by the applicant and an electrolyte obtained by dissolving LiPF₆ in the concentration of 1 mole/liter into a solvent of 1:2 (volume ratio at 20.degree. C.) mixture of ethylene carbonate (EC) and diethyl carbonate (DEC) (col. 12 lines 5-8), it is inherent that the copolymer exhibits a swelling degree of 4 or below.

As to the copolymer obtained by multistage-polymerizing is a product by process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

As to claims 3-4, wherein the multistage polymerization comprises a first polymerization step of polymerizing the component (a) and a subsequent second polymerization step of adding the component (b) thereto and polymerizing these components, wherein the first polymerization step is a step of polymerizing 15 to 80 parts by weight of the component (a) until the polymerization conversion ratio thereof reaches 60 to 97 weight %, and the second polymerization step is a step of adding 20 to 85 parts by weight of the component (b) thereto (wherein the amount of all the monomers is 100 parts by weight) and polymerizing the components until the polymerization conversion ratio reaches 90 weight % or more of all the monomers is a product by process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

As to claims 5-7, wherein the multistage polymerization comprises a three-stage polymerization process, wherein the multistage polymerization comprises a first polymerization step of adding a part of the component (a) and then polymerizing it, a

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subsequent second polymerization step of adding thereto the component (b) and polymerizing the components, and a subsequent third polymerization step of adding thereto the remaining component (a) and polymerizing the components, wherein the first polymerization step is a step of polymerizing 5 to 50 parts by weight of the component (a) until the polymerization conversion ratio thereof reaches 60 to 97 weight %, the second polymerization step is a step of adding 20 to 85 parts by weight of the component (b) thereto and polymerizing the components until the polymerization conversion ratio reaches 60 to 97 weight % of all the monomers added up to this step, and the third polymerization step is a step of adding 5 to 50 parts by weight of the component (a) thereto (wherein the amount of all the monomers is 100 parts by weight) and polymerizing the components until the polymerization conversion ratio reaches 90 weight % or more of all the monomers is a product by process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

As to claim 8, Yamamoto et al. discloses an active material (col. 13 line 15) for an electrode, and an organic liquid medium (col. 10 line 41).

As to claim 9, Yamamoto et al. discloses wherein the organic liquid medium is N-methylpyrrolidone (col. 11 line 24).

As to claim 10, Yamamoto et al. discloses a production method for a lithium ion secondary battery electrode, wherein the slurry composition for electrode of lithium ion

secondary battery as claimed in claim 8 is applied onto a current collector and then dried (col. 14 lines 12-29).

As to claim 11, Yamamoto et al. discloses an active material for an electrode is bonded to a current collector (col. 14 lines 12-29).

As to claim 12, Yamamoto et al. discloses a lithium ion secondary battery, which comprises the electrode as claimed in claim 11 (col. 14 line 34).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE RHEE whose telephone number is (571)272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jane Rhee/
Primary Examiner, Art Unit 1795
February 3, 2008